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ABSTRACT

The UNESCO (United Nations Education, Scientific, and Cultural Organization) revised recommendation setting forth general principles, goals, and guidelines concerning technical and vocational education (adopted by the General Conference at its 18th session in Paris, 19 November 1974) is presented under the following headings: (1) Technical and vocational education in relation to the educational process: objectives; (2) policy, planning, and administration; technical and vocational aspects of general education; (3) technical and vocational education as preparation for an occupational field (organization and program content); (4) technical and vocational education as continuing education; (5) guidance; (6) the teaching and learning processes: Methods and materials; (7) staff (teaching, administrative and guidance); and (8) international cooperation. (TA)

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ED134680

United Nations Educational, Scientific and Cultural Organization

Revised recommendation concerning technical and vocational education

adopted by the General Conference at its eighteenth session
Paris, 19 November 1974

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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CE 009 494

Revised Recommendation concerning Technical and Vocational Education

The General Conference of the United Nations Educational, Scientific and Cultural Organization, meeting in Paris, at its eighteenth session, held from 17 October to 23 November 1974,

Recalling the constitutional responsibilities of the Organization for the promotion of education,

Recognizing that technical and vocational education have to contribute to the maintenance of peace and friendly understanding between the various nations,

Considering that education must now be seen as a lifelong process,

Recognizing that technical and vocational education is a prerequisite for sustaining the complex structure of modern civilization and economic and social development,

Recalling the principles set forth in Articles 23 and 26 of the Universal Declaration of Human Rights guaranteeing all the right to work and to education,

Considering therefore that all have a right to an education enabling full participation in contemporary society,

Taking into account the diversity of education systems throughout the world, as well as the particular and urgent needs of developing countries,

Considering that in spite of this diversity similar goals are pursued and similar questions and problems arise in all countries concerning technical and vocational education and that therefore common standards and measures are called for,

Having adopted for this purpose at its twelfth session the Recommendation concerning Technical and Vocational Education,

Recognizing however that the rapid technological and educational changes of the last decade require new, creative, and efficient efforts in technical and vocational education to improve education as a whole for social, economic and cultural development,

Having decided at its seventeenth session that in view of these changes this Recommendation should be revised in order to better serve Member States,

Noting that the International Labour Conference has adopted, over the years, a number of instruments dealing with various aspects of vocational guidance and vocational training and, in particular, the Vocational Guidance Recommendation, 1949, the Vocational Training (Agriculture) Recommendation, 1956, and the Vocational Training Recommendation, 1962, and that the Conference, at its 59th session, had adopted substantive conclusions with a view to adoption, in 1975, of a new instrument or instruments on vocational guidance and vocational training,

Noting further the close collaboration between Unesco and the International Labour Organisation (ILO) in drawing up their respective instruments so that they pursue harmonious objectives, avoiding duplication and conflict, and with a view to continued collaboration for effective implementation of the two instruments,

Adopts this Recommendation this nineteenth day of November 1974.

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The General Conference recommends that when developing and improving technical and vocational education, Member States should apply the following provisions by taking whatever legislative or other steps may be required to give effect, within their respective territories, to the principles set forth in this Recommendation.

The General Conference recommends that Member States should bring this Recommendation to the knowledge of the authorities and bodies concerned with technical and vocational education.

The General Conference recommends that Member States should report to it, at such times and in such manner as shall be determined by it, on the action they have taken to give effect to the Recommendation.

I. Scope

1. This Recommendation applies to all forms and aspects of education which are technical and vocational in nature provided either in educational institutions or under their authority, directly by public authorities, or through other forms of organized education, public or private.
2. For the purposes of this Recommendation: 'technical and vocational education' is used as a comprehensive term referring to those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life. Technical and vocational education is further understood to be:
   (a) an integral part of general education;
   (b) a means of preparing for an occupational field;
   (c) an aspect of continuing education.
3. Technical and vocational education, being part of the total educational process, is included in the term 'education' as defined in the Convention and Recommendation against Discrimination in Education adopted by the General Conference of the United Nations Educational, Scientific and Cultural Organization at its eleventh session and the provisions of that Convention and Recommendation are therefore applicable to it.
4. This recommendation should be understood as setting forth general principles, goals and guidelines to be applied by each individual country according to needs and resources. The application of the provisions in their particulars and the timing of the implementation will therefore depend upon the conditions existing in a given country

II. Technical and vocational education in relation to the educational process: objectives

5. Given immense scientific and technological development, either in progress or envisaged, which characterizes the present era, technical and vocational education should be a vital aspect of the educational process and in particular should:
   (a) contribute to the achievement of society's goals of greater democratization and social, cultural and economic development, while at the same time developing the potential of individuals for active participation in the establishment and implementation of these goals;
   (b) lead to an understanding of the scientific and technological aspects of contemporary civilization in such a way that men comprehend their environment and are capable of acting upon it while taking a critical view of the social, political and environmental implications of scientific and technological change.
6. Given the necessity for new relationships between education, working life, and the community as a whole, technical and vocational education should exist as part of a system of lifelong education adapted to the needs of each particular country. This system should be directed to:
   (a) abolishing barriers between levels and areas of education, between education and employment and between school and society through:
      (i) the integration of technical and vocational and general education in all educational streams above primary level;
      (ii) the creation of open and flexible educational structures;
      (iii) the taking into account of individuals' educational needs and of the evolution of occupations and jobs;

(b) improving the quality of life by permitting the individual to expand his intellectual horizons and to acquire and to constantly improve professional skills and knowledge while allowing society to utilize the fruits of economic and technological change for the general welfare.

7. Technical and vocational education should begin with a broad basic vocational education, thus facilitating horizontal and vertical articulation within the education system and between school and employment thus contributing to the elimination of all forms of discrimination and should be designed so that it:

(a) is an integral part of everyone's basic general education in the form of initiation to technology and to the world of work;

(b) may be freely and positively chosen as the means by which one develops talents, interests and skills leading to an occupation in the sectors listed in paragraph 2 or to further education;

(c) allows access to other aspects and areas of education at all levels by being grounded on a solid general education and, as a result of the integration mentioned in paragraph 6(a), containing a general education component through all stages of specialization;

(d) allows transfers from one field to another within technical and vocational education;

(e) is readily available to all and for all appropriate types of specialization, within and outside formal education systems, and in conjunction or in parallel with training in order to permit educational, career and job mobility at a minimum age at which the general basic education is considered to have been acquired, according to the education system in force in each country;

(f) is available on the above terms and on a basis of equality to women as well as men;

(g) is available to disadvantaged and handicapped persons in special forms adapted to their needs in order to integrate them more easily into society.

8. In terms of the needs and aspirations of individuals, technical and vocational education should:

(a) permit the harmonious development of personality and character and foster the spiritual and human values, the capacity for understanding, judgement, critical thinking and self-expression;

(b) prepare the individual to learn continuously by developing the necessary mental tools, practical skills and attitudes;

(c) develop capacities for decision-making and the qualities necessary for active and intelligent participation, teamwork and leadership at work and in the community as a whole.

III. Policy, planning and administration

9. Policy should be formulated and technical and vocational education administered in support of the general objectives adopted for the educational process as well as for national and, if possible, regional social and economic requirements, and an appropriate legislative and financial framework adopted. Policy should be directed to both the structural and the qualitative improvement of technical and vocational education.

10. Particular attention should be given to planning the development and expansion of technical and vocational education:

(a) high priority should be placed on technical and vocational education in national development plans as well as in plans for educational reform;

(b) planning should be based upon a thorough evaluation of both short-term and long-term needs taking into consideration any variation in needs which may exist within a country;

(c) adequate provision for proper current and future allocation of financial resources should be a major element of planning;

(d) planning should be done by a responsible body or bodies having authority on the national level. This body should have available to it data which have been collated, analysed, synthesized and interpreted by qualified staff provided with adequate research facilities.

11. Planning should be responsible to national and, if possible, regional, economic and social trends, to projected changes in demand for different classes by goods and services, and for different types of skills and knowledge in such a way that technical and vocational education may easily adapt to the evolving situation be it rural or urban. This planning should also be co-ordinated with current and projected training action and the evolution of employment.

12. While the education authorities should have primary responsibility, the following groups and authorities should be actively associated in policy formulation, and in the planning process. Structures, on both national and local levels, taking the form of public agencies or consultative or advisory bodies, should be created to permit this:
   (a) public authorities responsible for planning economic and social policy, labour and employment, and for the various occupational sectors (industry, agriculture, commerce);
   (b) representatives of non-governmental organizations within each occupation sector from among employers and workers;
   (c) any authority or body, such as a training body or extension services, responsible for out-of-school education and training;
   (d) representatives of those responsible—both in public education and in State recognized private education—for executing educational policy including teachers, examining bodies and administrators;
   (e) parent, former pupil, student and youth organizations;
   (f) representatives from the community at large.
13. Policies for the structural improvement of technical and vocational education should be established within the framework of broad policies designed to implement the principle of lifelong education through the creation of open, flexible and complementary structures for education, training and educational and vocational guidance, regardless of whether these activities take place within the system of formal education or outside it. In this respect consideration should be given to the following:
   (a) multipurpose secondary education offering diversified curricula including work-study programmes;
   (b) open tertiary institutions recruiting from a variety of sources and offering programmes ranging from short specialized ones to longer full-time programmes of integrated studies and professional specialization;
   (c) establishing a system of equivalencies whereby credit is given for completion of any approved programme and recognition is granted educational and professional qualifications achieved through various means.
14. Policy should be directed to ensuring high quality in such a way as to exclude the possibility of any judgement which discriminates between the different educational streams, whatever their ultimate goal. In this respect special efforts should be made to ensure that technical and vocational education in rural areas meets the same standards as that offered in urban ones.
15. In order to ensure quality, responsible national authorities should establish certain criteria and standards, subject to periodic review and evaluation, applying in all aspects of technical and vocational education, including to the extent possible non-formal education for:
   (a) all forms of recognition of achievement and consequent qualification;
   (b) staff qualifications;
   (c) ratios of teaching and training staff to learners;
   (d) the quality of curricula and teaching materials;
   (e) safety precautions for all learning environments;
   (f) physical facilities, building, workshop layouts, quality and type of equipment.
16. Policies should be established fostering research related to technical and vocational education, with particular emphasis on its potential within lifelong education, and directed to its improvement. This research should be carried out by competent staff on national and institutional levels as well as through individual initiative. To this end:
   (a) special emphasis should be placed on curriculum development, research concerning teaching and learning methods and materials, and where the need exists, on technologies and techniques applied to development problems;
   (b) financial resources and physical facilities should be made available through institutions of higher education, specialized research institutions and professional organizations for applying the results of this research on an experimental basis in representatively selected institutions for technical and vocational education;
   (c) channels should be created for the widespread dissemination and rapid application of the positive results of research and experimentation;

(d) the effectiveness of technical and vocational education should be evaluated using, among other data, relevant statistics including those concerning part-time enrolments and drop-out rates which are in some cases neglected;

(e) particular attention should be given to all research efforts to humanize working conditions.

17. Provision should be made within administrative structures for evaluation, supervisory and accreditation services, staffed by technical and vocational education specialists, to ensure the rapid application of new research findings and to maintain standards:

(a) evaluation services as a whole should ensure the quality and smooth operation of technical and vocational education by continuous review and action directed to constant improvement of staff, facilities and programmes;

(b) supervisory services for the staff should encourage improvement in the quality of teaching by providing guidance and advice and recommending continuing education;

(c) all programmes of technical and vocational education, in particular, those offered by private bodies, should be subject to approval by the public authorities through some means of accreditation or form of public inspection.

18. Particular attention should be given to the material resources required for technical and vocational education. Priorities should be carefully established with due regard for immediate needs and the probable directions of future expansion and adequate cost controls introduced:

(a) institutional planning should be directed to ensuring maximum efficiency and flexibility in use;

(b) the planning, construction and equipping of facilities should be carried out in collaboration with specialist teachers and educational architects and with due regard for their purpose, prevailing local factors and relevant research;

(c) adequate funds should be allocated for recurrent expenditure for supplies and maintenance and repair of equipment.

IV. Technical and vocational aspects of general education

19. An initiation to technology and to the world of work should be an essential component of general education without which this education is incomplete. An understanding of the technological facet of modern culture in both its positive and negative attributes, and an appreciation of work requiring practical skills should thereby be acquired. This initiation should further be a major concern in educational reform and change with a view to greater democratization of education. It should be a required element in the curriculum, beginning in primary education and continuing through the early years of secondary education.

20. Opportunities for general technical and vocational initiation should continue to be available to those who wish to avail themselves of it within the educational system and outside it in places of work or community centres.

21. The technical and vocational initiation in the general education of youth should fulfil the educational requirements of all ranges of interest and ability. It should mainly perform three functions:

(a) to enlarge educational horizons by serving as an introduction to the world of work and the world of technology and its products through the exploration of materials, tools, techniques and the process of production, distribution and management as a whole, and to broaden the learning process through practical experience;

(b) to orient those with the interest and ability toward technical and vocational education as preparation for an occupational field or toward training outside the formal education system;

(c) to promote in those who will leave formal education at whatever level but with no specific occupational aims or skills, attitudes of mind and ways of thought likely to enhance their aptitudes and potential, to facilitate the choice of an occupation and access to a first job, and to permit them to continue their vocational training and personal education.

22. Required general technical and vocational studies in the schools having great importance for the orientation and education of youth programmes, should include a proper balance between theoretical and practical work. A properly structured programme of such studies should be drawn up by the competent authorities in collaboration with the professional community and with those responsible for technical and vocational education. These programmes should:

(a) be based upon a problem-solving and experimental approach and involve experience in planning methods and decision-making;
(b) introduce the learner to a broad spectrum of technological fields and at the same time to productive work situations;
(c) develop a certain command of valuable practical skills such as tool use, repair and maintenance and safety procedures, whether applicable to future education, training and employment or to leisure time, and a respect for their value;
(d) develop an appreciation of good design and craftsmanship and the ability to select goods on the basis of their quality;
(e) develop the ability to communicate including the use of graphical means;
(f) develop the ability to measure and calculate accurately;
(g) be closely related to the local environment without, however, being limited to it.

23. The technical and vocational initiation in programmes of general educational enrichment for older youth and adults should be directed to enabling those engaged in working life to:
(a) understand the general implications of technological change, its impact on their professional and private lives, and how man may shape this change;
(b) to use practical skills for improving the home and community environment and thus the quality of life and, in appropriate conditions, for productive leisure-time activities.

V. Technical and vocational education as preparation for an occupational field

24. Given disparities that may exist between formal education, whether secondary or tertiary, and the employment and career opportunities available, the highest priority should be given to technical and vocational education which prepares young people to exercise occupations in the sectors covered by this recommendation. Consequently the structure and content of traditional education, whether general or technical and vocational, should be adapted accordingly through:
(a) the diversification of secondary education in the later stages so that it may be pursued in conjunction with employment or training, or may lead to employment or to higher education, thereby offering to all youth educational options corresponding to their needs;
(b) the introduction of new programmes into tertiary education more relevant to the career needs of young adults;
(c) the development of educational structures and programmes on all levels centred on organized and flexible interchange between educational institutions including training institutions and those responsible for employment in the various occupational sectors.

25. Technical and vocational education as preparation for an occupational field should provide the foundation for productive and satisfying careers and should:
(a) lead to the acquisition of broad knowledge and basic skills applicable to a number of occupations within a given field so that the individual is not limited by his education in his freedom of occupational choice, and later transfer from one field to another in the course of working life is facilitated;
(b) at the same time offer a thorough and specialized preparation for initial employment and effective training within employment;
(c) provide the background in terms of skills, knowledge and attitudes, for continuing education at any point in the individual's working life.

26. Premature and narrow specialization should be avoided:
(a) in principle 15 should be considered the lower age limit for beginning specialization;
(b) a period of common studies concerning basic knowledge and skills should be required for each broad occupational sector before a special branch is chosen.

27. Because it is desirable that women seek wider participation in all kinds of occupations outside family and domestic activities, they should have the same educational opportunities available to them as men in order to prepare for an occupation and should be encouraged to take advantage of these through appropriate legislative measures and widespread distribution of information concerning these opportunities.

28. Special provision should be made for out-of-school and unemployed youth and children of migrant workers with the minimum or less of primary education, as well as for those not

entering education or training programmes after completion of compulsory schooling, in order that they may acquire employable skills.

29. Given the necessity of integrating the physically and mentally disadvantaged into society and its occupations, the same educational opportunities should be available to them as to the non-handicapped in order that they may achieve qualification for an occupation; special measures or special institutions may be required.

Organization

30. Technical and vocational education as preparation for an occupational field should be organized on a national or, if possible, regional basis, so as to respond positively to over-all social, economic and educational requirements and to the needs of different groups of the population without discrimination.

31. Several organizational patterns of technical and vocational education, including both full-time and part-time options should exist within each country. The following patterns of organization for example should be considered:

(a) full time including practical training as well as general education, provided in an educational establishment, either comprehensive or specialized;

(b) part-time programmes such as the following in which general education and theoretical and broad practical aspects of the occupational field are given in an educational establishment while specialized practical training is acquired during work in the chosen occupation:

(i) the day-release system providing for young workers and apprentices to attend an educational establishment at least one day a week and preferably two;

(ii) the sandwich system under which periods in an educational institution alternate with training periods in a factory, farm, business establishment or other undertaking;

(iii) the block-release system whereby young workers are released to attend courses for one or two short periods of at least ten to fifteen weeks in total length per year which may be especially adapted to conditions in areas of low population density by provision of boarding facilities.

32. The responsible authorities should encourage part-time education, therefore:

(a) these programmes should be available directly after completion of minimum compulsory or required schooling, and should continue to be available to the highest level of formal education;

(b) the educational qualifications acquired by this means should be equivalent to those acquired by full-time education;

(c) where employers are responsible for the practical training aspect for part-time students, this training should be as broad as possible serving the educational and training needs of the individual, and should meet national standards.

33. In view of the increasing requirement for highly qualified middle-level manpower in all fields, and the increasing numbers completing secondary education or its equivalent, the development of programmes of technical and vocational education corresponding to further qualifying tertiary education should be given high priority. The following patterns of organization should be considered:

(a) a period of from one to two years of guided work experience followed by a part-time or briefer full-time programme of specialization;

(b) part-time programmes;

(c) full-time programmes as an extension of programmes given in specialized secondary institutions or given in tertiary institutions.

34. The high cost of equipment for the practical component of technical and vocational education requires that this be organized so that benefits received are in proportion to the cost. Consideration should be given to the following as a means of achieving this:

(a) centralized workshops, or mobile units, could be used to serve several educational institutions;

(b) workshops attached to educational institutions could be designed so that they are suitable for use by the community at large particularly for continuing education programmes;

(c) although workshops and laboratories in advanced secondary or tertiary institutions should be designed primarily for pedagogical purposes, they might also be equipped and staffed

so that equipment for use in technical and vocational studies in general education may be produced.

35. Enterprises should be closely associated in the practical training of those preparing for occupations in their particular sector, and should be encouraged to take responsibility, in co-operation with educational institutions, for the organization of this training.

Programme content

36. All programmes of technical and vocational education as preparation for an occupational field should:
    (a) aim at providing scientific knowledge, technical versatility and the broad skills and knowledge required for rapid adaptation to new ideas and procedures and for steady career development;
    (b) be based on an analysis of broad occupational requirements worked out for the long term between education authorities including organizations representing educational research and administration and employment authorities and occupational organizations concerned;
    (c) include a proper balance between general subjects, science and technology, and studies of both the theoretical and practical aspects of the occupational field, with the practical component in all cases related to the theoretical one;
    (d) stress developing a sense of professional values and responsibilities from the standpoint of human needs.
37. In particular programmes should:
    (a) whenever possible be interdisciplinary in character as many occupations now require knowledge and training in two or more traditional areas of study;
    (b) be based on curricula designed around core knowledge and skills;
    (c) include studies of the social and economic aspects of the occupational field as a whole;
    (d) include the study of at least one foreign language of international use which, while conducive to a higher cultural level, will give special emphasis to the requirements of communication and the acquisition of a scientific and technical vocabulary;
    (e) include an introduction to organizational and planning skills;
    (f) emphasize instruction in safety procedures relative to the materials and equipment used in a given occupational field and the importance of safe working conditions and the health aspects relative to the occupation as a whole.
38. While based on the above general principles and components, and thus pursuing in all cases broader educational aims, programmes in their practical aspect should be designed taking into account special occupational requirements with regard to the particular executive, organizational, analytical and practical skills required.
39. Technical and vocational education programmes leading to university qualification, while encouraging research and offering high-level specialization, should be developed with particular attention to:
    (a) the inclusion of components directed to developing attitudes whereby those with broad responsibilities in technological fields constantly relate their professional tasks to larger human goals;
    (b) relating more closely higher technical and vocational education for the industrial and agricultural sectors to the requirements of these sectors. In this regard consideration should be given to creating within tertiary institutions, centres for the testing and certification of industrial and agricultural products, supervised by the public authorities and serving both educational and research purposes.
40. Programmes of technical and vocational education as preparation for occupations within the agricultural sector should be designed in accordance with the over-all social and economic requirements of rural development. Therefore:
    (a) both general aspects and the technical and vocational aspects, while adapted in terms of both organization and content to the special requirements of agricultural occupations, should be of the same quality as those for other occupational areas;
    (b) programmes should be directed to the development and application of technologies especially suited to rural development through close co-ordination between education and extension services and between these and research services and institutions;

(c) programmes should be directed to preparing qualified people for all types of occupations and ranges of technical competence necessary for rural development;

(d) programmes should be broadly conceived, including in addition to the special occupational area, an introduction to the commercial aspects of agriculture and the functioning of rural economic institutions.

41. Where lack of resources limits the expansion of technical and vocational education, emphasis in the initial stages should be placed on developing programmes for occupations in areas of critical manpower shortage, and in areas of immediate development potential.

42. Programmes preparing for occupations in small industry, individual farming or the artisan trades, whether urban or rural, and particularly for self-employment, should include commercial studies enabling those engaged in such occupations to take responsibility not only for production, but also for marketing, competent management and the rational organization of the whole enterprise.

43. Programmes leading to occupations in the business and commercial sector should include:

(a) a thorough grounding in the methods and skills developed as a result of the application of technology to business and office management and particularly to the acquisition and processing of information;

(b) training in the organizational and management skills required for the smooth operation of enterprises in all economic sectors;

(c) an introduction to marketing and distribution procedures.

44. Special attention should be given to developing programmes for preparing personnel at all levels for the social services sector (e.g. community and family work, nursing and paramedical occupations, nutrition and food technology, home economics and environmental improvement). Those programmes should:

(a) emphasize the relation of the special occupational field to raising standards of living in terms of food, clothing, housing, medical services, the quality of family life or that of the environment as the case may be;

(b) be well adapted to the special requirements of local conditions in particular those of climate and geography, materials available and community organization and social patterns.

VI. Technical and vocational education as continuing education

45. The development and expansion of technical and vocational education as continuing education, both within and outside the formal education system, and within the framework of lifelong education, should be a priority objective of all educational strategies and broad provision should be made for allowing everyone, whatever the educational qualifications achieved prior to employment, to continue both their professional and general education.

46. In addition to permitting adults to make up deficiencies in general education or professional qualifications, which has often been the only objective of continuing education, it should now:

(a) offer possibilities of personal development and professional advancement;

(b) permit the updating and refreshing of knowledge and practical abilities and skills in the occupational field;

(c) enable the individual to adapt to technological changes in his occupation or to enter another occupation if these changes render his particular job obsolete;

(d) be available throughout working life without restriction of age, sex, prior education and training or position;

(e) be broad in scope, including general education elements, and not simply specialized training for one particular job.

47. The appropriate authorities should be encouraged to provide the basic conditions for technical and vocational education as continuing education, including consideration of measures providing for paid educational leave or other forms of financial aid.

48. The technical and vocational aspect of continuing education should actively be encouraged through such means as:

(a) widespread dissemination of information concerning the programmes available, and how one

may take advantage of existing opportunities, including full use of mass media to this end;

(b) recognition of successful completion of programmes in terms of remuneration and professional advancement.

49. Those responsible for organizing programmes of continuing technical and vocational education recognized by the public authorities should consider the following forms:

(a) courses given during working hours at the place of work;

(b) fuller part-time courses especially designed for continuing education given in secondary and tertiary institutions, already staffed and equipped for technical and vocational education;

(c) evening and week-end courses given in the above types of institutions or in community centres;

(d) correspondence courses;

(e) courses given on educational television;

(f) periodic seminars;

(g) inter-enterprise programmes;

(h) informal discussion groups created and organized on the initiative of students.

50. The following forms of organization of leave should be considered:

(a) day release;

(b) block release of varying lengths;

(c) release for one or more hours during the working day.

51. Programmes of technical and vocational education as continuing education should:

(a) be designed and taught on the basis of the special requirements of adults, and use teaching methods which take into account the expertise which they have already acquired;

(b) contain a built-in mechanism for rapid adjustment to the needs of particular individuals or groups and to technological change.

52. Special provision should be made for groups with particular requirements:

(a) in the case of women, because of the necessity of periods of absence from the labour force imposed by maternity and family responsibilities, in order to enable them to update their knowledge and to improve their professional skills for re-entry into employment;

(b) to enable older workers to adapt to new occupations;

(c) to provide foreign workers and handicapped workers with specific facilities for pre-training to enable them to adapt to a training programme or to working life;

(d) the resources of continuing education should be used to offer unskilled and semi-skilled workers the opportunity to improve their qualifications.

53. Particular attention should be paid to the development of continuing education programmes suitable in rural areas in terms of content, physical location and time of year offered.

VII. Guidance

54. Guidance should be viewed as a continuous process and a vital element in education, directed to aiding all to make positive educational and occupational choices. It should ensure that the individual be provided with the necessary prerequisites:

(a) to become aware of his interests and abilities and able to set himself precise objectives;

(b) to pursue a course of education, whether preparatory or continuing, commensurate with these;

(c) to make decisions concerning his occupation, both in the initial and later stages, which lead to a satisfying career;

(d) to facilitate transitions between education and employment at whatever level or stage.

55. Guidance services on the national, local and institutional levels should ensure that the paths are kept open between education and initial training and employment, and employment and continuing education and training through:

(a) close liaison and co-ordination with training, counselling, employment and placement services;

(b) ensuring that all necessary information concerning employment and career opportunities is available and actively disseminated;

(c) ensuring that those in employment have access to information concerning opportunities in continuing education and training.

56. While emphasizing the needs of the individual, guidance for young people should be accompanied by information which gives them a realistic view of the opportunities available in a given occupational cluster, including information regarding probable developments in the market and in employment structures, and what may be expected in terms of remuneration, career advancement and possibilities for occupational change.

57. Particular attention should be given to guidance for girls and women:
   (a) this guidance should cover the same broad range of education, training and employment opportunities as for boys and men;
   (b) it should systematically encourage girls and women to take advantage of the opportunities available to them.

58. Guidance given in the technical and vocational aspects of general education during the observation or orientation cycle of secondary schooling should:
   (a) cover a broad range of occupations with supplementary visits to work places and acquaint the student with the eventual necessity of choosing an occupation and the importance of this choice being as rational as possible;
   (b) aid students in making a positive choice concerning educational streams or options for those wishing to pursue technical and vocational education as preparation for an occupational field or training programmes outside the educational system, and aid those not continuing their formal education or entering training to find employment, while encouraging them to continue their education at a later date.

59. Guidance in technical and vocational education as preparation for an occupational field should:
   (a) inform the student of the various possibilities open in the particular field of interest, the educational background required and the possibilities for later continuing education available;
   (b) encourage the student to choose an educational programme which will limit his later employment options as little as possible;
   (c) follow the progress of the student during the educational programmes;
   (d) supplement the later stages of the programmes by short periods of work experience and study of real work situations.

60. Guidance in technical and vocational education as continuing education should:
   (a) help the employed adult choose the programme of continuing education most suited to his needs;
   (b) enable him to place himself in relation to the various levels of study and afford him the means of making effective choices.

61. Guidance should be given on the basis of:
   (a) knowledge of the individual which takes account of the social and family factors influencing his attitudes and expectations;
   (b) information obtained from objective evaluation of the results of testing including aptitude tests;
   (c) knowledge of his educational achievements and/or achievements in employment;
   (d) knowledge of employment and career opportunities as well as job satisfaction in the occupational sector in which he is interested or engaged and of demands made;
   (e) medical records indicating whether the student is physically able to pursue a given occupation.

62. The effectiveness of guidance services should continually be assessed and statistics kept on both the national and institutional levels through:
   (a) the keeping of cumulative records concerning the education of the student as well as follow-up records concerning his employment;
   (b) a built-in system of evaluation of both quality of staff performance and the methods used in order to effect change or improvement where needed.

VIII. The teaching and learning processes: methods and materials

63. In all aspects of technical and vocational education, the methodology of learning should assume equal importance in the teaching and learning process with the subject-matter itself. All aspects of technical and vocational education should be oriented to the needs of the learner and directed to motivating him, and methods and materials developed accordingly.

64. Theory and practice should form an integrated whole: what is learned in the laboratory,

workshop or in enterprises should be directly related to the mathematical and scientific foundations of the particular operation or process, and conversely, technical theory, as well as the mathematics and science sustaining it, should be illustrated through their practical applications.

65. Full use should be made of the resources provided by educational technology, with special emphasis on the methods and materials of self-education, in particular audio-visual aids, including multi-media systems, programmed instruction and the use of mass media.

66. The methods and materials used in technical and vocational education should be carefully adapted to the group to be taught. In this respect:
   (a) where the language of instruction differs from the native language, teaching materials should make maximum use of numerical and graphical representation, written material being kept to a minimum;
   (b) where materials developed in one country are adapted for use in another, this adaptation should be carefully made with due regard to local factors.

67. Machines and equipment used in workshops in educational institutions should be geared to the level and training of the users. This equipment should be simple and designed especially for pedagogical purposes without however being obsolete or teaching obsolete procedures. Training using complex equipment may be given more appropriately and efficiently on the job.

Evaluation

68. Evaluation should be an integral part of the teaching and learning process in technical and vocational education, and its major function should be the development of the particular individual in accordance with his interests and capacities.

69. Although standards of performance should be upheld, evaluation of the student's work should be made on a total basis considering among others his class participation, his interest and attitude, his relative progress, allowance being made for his aptitudes, and examinations and other tests.

70. Students should participate in the evaluation of their own progress and the evaluation of student work should have a system of feedback built into it so that learning problems and their causes may be identified and steps taken to correct them.

71. Continuous evaluation of the teaching process should be made by both teachers and their supervisors, with the participation of students as well, in order to determine the effectiveness of the methods and materials used, and to devise alternatives should the need arise. Continuous evaluation of the teaching-learning process should be undertaken with the participation of representatives from the occupational fields concerned.

IX. Staff

72. To enhance the achievement of the objectives of technical and vocational education, a priority should be given to the recruitment and preparation of adequate numbers of well-qualified and competent teachers, administrators, and guidance staff and to the provision of the necessary training and other facilities to enable them to function effectively in their profession.

73. The emoluments and conditions of service which are offered should compare favourably with those enjoyed by persons with similar qualification and experience in other occupational sectors. In particular, promotions, salaries and pension scales for technical and vocational education staff should take into account any relevant experience acquired in employment outside the educational sector.

Teaching staff

74. All teachers in technical and vocational education, including those who teach only practice, should be considered an integral part of the teaching profession and as such should be recognized as having the same status as their colleagues in other fields. In this regard:
   (a) the Recommendation concerning the Status of Teachers adopted by the Special Intergovernmental Conference on the Status of Teachers on 5 October 1966 is applicable to them

especially as regards the provisions concerning preparation for a profession and continuing education; employment and career; the rights and responsibilities of teachers; conditions for effective teaching and learning; teachers' salaries; social security;

(b) arbitrary distinctions between teachers employed by various types of educational institutions, e.g. specialized technical and vocational institutions and general education institutions should be eliminated.

75. Teachers involved in any aspect of technical and vocational education, whether on a full-time or part-time basis, should possess the personal, ethical, professional and teaching qualities essential for the accomplishment of their work.

76. Teachers of technical and vocational aspects in general education should:

(a) be familiar with a broad range of specialities;

(b) develop the ability to relate these to each other as well as to the larger social, economic and historical and cultural context;

(c) where this aspect of technical and vocational education serves primarily an occupation or educational orientation function, be able to give guidance.

77. Considering technical and vocational education as preparation for an occupational field, teachers in this area should have special qualifications depending on the occupation for which they are preparing students:

(a) if the occupational field requires primarily practical skills the teacher should himself have long employment experience in the exercise of these skills;

(b) if students are to be prepared for technician or middle management positions, teachers should have a thorough knowledge, preferably acquired through appropriate practical experience, of the special requirements of this type of position;

(c) if the occupational field requires research and theoretical analysis, e.g. an engineering field, the teacher should have a university education and be actively engaged in research himself.

78. Considering technical and vocational education as continuing education, teachers in this area should, in addition to the special preparation for teaching adults, have an adequate knowledge of the working environment of their students and have specialized knowledge and skills in their teaching field.

79. Skilled professionals employed in appropriate sectors outside education should be invited to teach, at suitable points in technical and vocational education, certain programmes in schools, universities or other educational institutions in order to link the world of work more closely to the classroom.

80. Teachers of general subjects in institutions which offer technical and vocational education, in addition to the usual qualification, both professional and in their teaching field, should receive a special initiation concerning the objectives and requirements of technical and vocational education.

81. Preparation for technical and vocational teaching should be given as a tertiary programme, thereby requiring completion of secondary education or its equivalent for entrance. All types of programme should be designed with the following objectives in mind:

(a) to maintain standards of education and professional preparation in vigour for the teaching profession as a whole and to contribute to the raising of these over-all standards;

(b) to develop in the future teacher the ability to teach both theoretical and the practical aspects of his field;

(c) to ensure that the teacher will be qualified, with minimum further training, to teach other groups than those for which he was prepared initially.

82. Varied and flexible programmes, full time and part time, adapted to the special requirements of a wide variety of recruitment sources as well as to those of the field to be taught and the group or groups to be taught should be available.

83. In those cases where it is difficult for intending technical and vocational teachers to acquire employment experience, consideration should be given to creating units, attached to teacher-training institutions, for the production of equipment and teaching materials for the schools in which intending teaching staff would be required to work for varying lengths of time.

84. The professional preparation of all technical and vocational teachers should include the following elements:

(a) educational theory both in general and as especially applying to technical and vocational education;
(b) educational psychology and sociology as it especially applies to the group or groups for which the future teacher will be responsible;
(c) special teaching methods appropriate to the field of technical and vocational education for which the future teacher is preparing and the groups to be taught, in methods of evaluation of student work, and in classroom management;
(d) training in the choice and use of the whole range of modern teaching techniques and aids presupposing the use of up-to-date methods and materials in the programme of professional preparation itself;
(e) training in how to create and produce appropriate teaching materials, of special importance in those cases where technical and vocational teaching materials are in short supply;
(f) a period of supervised practice teaching experience before appointment to a teaching post;
(g) an introduction to educational and occupational guidance methods as well as to educational administration;
(h) a thorough grounding in safety and emphasis on the ability to teach safe working practice and habitually to set a good working example.

85. Staff responsible for the preparation of technical and vocational teachers should have obtained the highest qualifications possible in their field:
(a) teacher-educators responsible for special technical and vocational fields should have qualifications in their field equivalent to those of special subjects staff in other institutions and programmes of higher education, including advanced degrees and employment experience in a related occupational field;
(b) teacher-educators responsible for the pedagogical aspect of teacher preparation should themselves be experienced teachers in technical and vocational education and should possess the highest qualifications in a specialized field of education.

86. Staff responsible for the preparation of technical and vocational teachers should be actively engaged in research in their field and provision should be made for this in terms of a reasonable teaching load and access to appropriate facilities.

87. Teaching staff should be encouraged to continue their education, whatever the field in which they specialize, and should have the necessary means to do so. This continuing education which should be made available in a wide range of facilities, should include:
(a) periodic review and updating of knowledge and skills in the special field;
(b) periodic updating of professional skills and knowledge;
(c) periodic work in the occupational sector relating to the special field.

88. Account should be taken of a teacher's achievements in continuing education when the responsible authorities consider questions of promotion, seniority and status concerning him.

Administrative and guidance staff

89. Administrative responsibilities for technical and vocational education programmes should be entrusted to persons with the following qualifications:
(a) teaching experience in a field of technical and vocational education;
(b) proficiency acquired through study and employment experience in one of the fields taught in the programme;
(c) a broad vision of technical and vocational education as a whole and of the interrelation of the various aspects;
(d) a knowledge of administrative techniques.

90. The heads of establishments in technical and vocational education should receive adequate administrative assistance so that they can devote most of their time to the highly important educational and scientific aspects of their work. Technical and vocational education establishments should have sufficient staff to provide the following services:
(a) advice and guidance for candidates and students;
(b) the preparation, supervision and co-ordination of all practical work and experiments;
(c) the maintenance of instruments, apparatus and tools in workshops and laboratories.

91. Administrators should keep up to date with new administrative techniques and trends through programmes of continuing education. Prospective administrators should receive special training in methods and problems involved in the task. This preparation should include:
(a) management methods appropriate to educational administration;
(b) methods of allocation of available resources given the objectives of the various programmes for which they will be responsible;
(c) planning methods.

92. Guidance staff should receive special preparation for their tasks whether they are specialists or are teachers serving also as guidance staff. This preparation should stress psychology, pedagogy, sociology and economics. Guidance staff should be equipped to make objective assessments of aptitude, interest and motivation and to have at hand up-to-date information concerning career and education opportunities. During this preparation they should acquire a direct knowledge of the economy and the world of work through systematically organized visits to enterprises and periods of time spent in enterprises. Guidance staff should be required and provided with facilities—including the opportunity for practical experience—to keep up with new methods of guidance and information as to new or changed educational training and employment opportunities.

X. International co-operation

93. Member States should give priority to international co-operation in the field of technical and vocational education.
(a) This co-operation, whether in the framework of bilateral or multilateral agreements, or through international organizations, should be directed to improving the quality of technical and vocational education and developing and expanding it where necessary.
(b) Every effort should be made to co-ordinate within any given country the international assistance activities in the field of technical and vocational education.

94. Member States should take special measures to provide foreigners (in particular migrants and refugees) and their children living within their territory with technical and vocational education. Such measures should take into account the special needs of such persons in the host country as well as in view of their possible return to their country.

95. Provision should be made at national, regional and international levels for the regular exchange of information, documentation, and materials of international interest obtained from research and development efforts on all levels concerning technical and vocational education, in particular:
(a) publications concerning, among others, comparative education, psychological and pedagogical problems affecting general and technical and vocational education, and current trends;
(b) information and documentation concerning curriculum development, methods and materials, study opportunities abroad, employment opportunities including manpower requirements, working conditions and social benefits;
(c) teaching materials and equipment;
(d) mass media programmes of an informational or pedagogical character.

96. Regional co-operation among countries having a common cultural heritage and facing common problems in the development or extension of technical and vocational education should be highly encouraged through:
(a) periodic meetings on the ministerial level and the establishment of a standing committee or organization to review policies formulated and actions taken;
(b) the creation of joint facilities for higher level research, the development of prototype materials and equipment, and the preparation of staff for the training of teachers where the costs of such facilities are too high to be sustained by any one country in a given region.

97. The development of both written and audio-visual teaching and learning materials which are suitable for international or regional use should be considered a priority area in international co-operation. These materials should contribute to the progressive establishment of common standards for professional qualifications acquired through technical and vocational education.

98. Member States should encourage the creation of a climate of opinion favourable to international

co-operation in the field of technical and vocational education through:

(a) teacher and student fellowships and exchanges;

(b) establishment of sustained contacts between similar institutions in different countries;

(c) provision of employment experience abroad, particularly when opportunities at home are limited.

99. To facilitate international co-operation, Member States should apply within technical and vocational education internationally recommended standards and norms relating in particular to:

(a) systems of measure;

(b) scientific and technical symbols;

(c) occupational qualifications;

(d) information processing;

(e) equivalencies of qualifications acquired through technical and vocational education implying standardization of curricula and testing, including aptitude tests, for some technical fields;

(f) safety and security through testing of materials and products.

100. Internationally recommended standards and norms concerning technical and vocational education should be continuously evaluated through sustained research concerning the effectiveness of their application in the various countries especially in order to facilitate the establishment of equivalence of qualifications and free movement of individuals between the different national systems of education.

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